

Notice of Allowability

Application No.

10/031,537

Examiner

John Kim

Applicant(s)

LIVINGSTON, ANDREW GUY

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/18/02.
2. ☒ The allowed claim(s) is/are 1-32.
3. ☒ The drawings filed on 18 January 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 5 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____ | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

Art Unit: 1723

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Scott McCollister on 9/16/03.

The application has been amended as follows:

- Claim 15, line 4: "the" before "non-porous" has been changed to --a--.
- New abstract has been provided on a separate sheet in last page of this office action.

2. The following is an examiner's statement of reasons for allowance:

U.S. Patent No. 5,507,949 (hereinafter referred to as Ho) is considered the closest prior art to the claimed invention. Ho teaches a process for selectively removing a dissolved species, particularly a polar organic compounds including aromatic amines, from an aqueous media by contacting one side of a supported liquid membrane with the aqueous media to cause the dissolved species to permeate or diffuse through the liquid membrane and then removing the dissolved species from an opposite side of the supported liquid membrane by stripping solution of acidic or basic solution (see col. 2, lines 34-43; col. 9, line 34 – col. 10, line 27). Ho further teaches that the driving force for continued transport of dissolved species, i.e. the polar organic compound, across the supported liquid membrane can be affinity or interaction with the strip solution (basic or acidic), can be the pH, can be vapor pressure and can be degradation (see col. 2, lines 43-52). Ho teaches the step of adjusting pH of the aqueous solution to between pKa's of the respective organic species to selectively remove ionizable organic compounds (see col. 9,

Art Unit: 1723

line 34 – col. 10, line 27). However, Ho neither teaches or suggests the claimed steps (b) – (d) in the method claim 1 wherein the volume of acidic stripping solution is regulated relative to the volume of aqueous fluid treated so that the total aromatic amine concentration in the acidic stripping solution, comprising the sum of the dissociated and undissociated aromatic amine concentrations, is above the solubility of the aromatic amine in water, the pH of the acidic stripping solution in contact with the membrane is regulated so that the membrane remains selectively permeable and the pH of the aromatic amine containing acidic stripping solution is adjusted to a value above the acidic dissociation constant of the aromatic amine. Claims 2-32 depend on the patentable claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

3. The information disclosure statement submitted on 1/18/02 has been considered by the examiner.
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,502,053 teaches a similar method of removing dissolved species from an aqueous solution as in Ho.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is (703) 308-2350. The examiner can normally be reached on weekdays from 7:00 AM - 3:00 PM.

Art Unit: 1723

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for official response is (703) 872-9306.

When sending a draft amendment by fax, please mark the paper as "DRAFT"; otherwise, mark the paper "OFFICIAL". This will expedite the processing of the paper.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.



John Kim
Primary Examiner
Art Unit 1723

J. Kim
September 16, 2003

--Abstract of the Disclosure

A process for removing and recovering undissociated aromatic amines dissolved in aqueous fluid comprises the steps of: (a) transferring undissociated aromatic amines from the aqueous fluid to an acidic stripping solution across a membrane wherein the membrane is a non-porous, selectively permeable membrane; (b) regulating the volume of acidic stripping solution employed relative to the volume of aqueous fluid treated so that the total aromatic amine concentration in the acidic stripping solutions, comprising the sum of the dissociated and undissociated aromatic amine concentrations, is above the solubility of the aromatic amine in water; (c) regulating the pH of the acidic stripping solution in contact with the membrane so that the membrane remains selectively permeable; (d) adjusting the pH of the aromatic amine containing acidic stripping solution to a value above the acidic dissociation constant of the aromatic amine and (e) separating the resulting aromatic amine and the acidic stripping solution.

--